Appendix C

Biological Resources Technical Reports

T.O. Ranch Mixed-Use and Multi-Family Residential Redevelopment Project

Oak and Landmark Tree Report

prepared for

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325 Hampshire Road
Westlake Village, California 91361
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2022 *Protected Oak and Landmark Tree Report, 325 Hampshire Road.* Rincon Project 21-11125. March 2022.

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1 Introduction

Rincon Consultants, Inc. (Rincon) prepared this report for the City of Thousand Oaks (City) for the 325 and 391 Hampshire Road Mixed-Use Project (project).

1.1 Regulatory Context

This report documents the results of a tree survey and the potential impacts to protected trees due to project implementation, pursuant to the City's Oak Tree Ordinance (Thousand Oaks Municipal Code [TOMC] Section 9-4.4203) and Landmark Tree Ordinance (TOMC Section 9-4.4303; Tree Ordinances) and the City's Oak Tree Preservation and Protection Guidelines (Guidelines). According to the City's Tree Ordinances and Guidelines, an Oak/Landmark Tree Permit is required for removal, relocation, or encroachment of/into the protected zone of an oak tree or landmark tree. Protected oak and landmark tree removals are to be mitigated at the discretion of the City in accordance with the Tree Ordinances. Protected oak and landmark trees are defined as follows:

- A protected oak tree is any oak tree of the genus *Quercus* including, but not limited to, valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), and scrub oak (*Quercus berberidifolia*), which exceeds two inches in diameter when measured at a point four and one-half feet above the natural grade at the base of the tree. For multiple trunk trees, the aggregate total diameter of all trunks shall exceed two inches in diameter (TOMC Section 9-4.4203).
- A landmark tree is any tree that is a California sycamore (*Platanus racemosa*) which exceeds twelve inches in diameter for a single trunk, a California bay laurel (*Umbellularia californica*) which exceeds eight inches in diameter, a California black walnut (*Juglans californica*) which exceeds eight inches in diameter, or a toyon (*Heteromeles arbutifolia*) which exceeds eight inches in diameter. For multiple trunk trees, the sum of the diameters of all trunks must exceed the required diameters listed above plus two inches. Landmark trees shall also include all City designated historic trees (TOMC Section 9-4.4303).

The City defines the tree protection zone (TPZ) of protected trees as the dripline plus 5 feet, or 15 feet from the trunk, whichever is greater. The Community Development Director may approve, deny, or conditionally approve a request to remove three or fewer oak/landmark trees on a single parcel provided the request does not involve an oak/landmark tree 24-inches in diameter or greater.

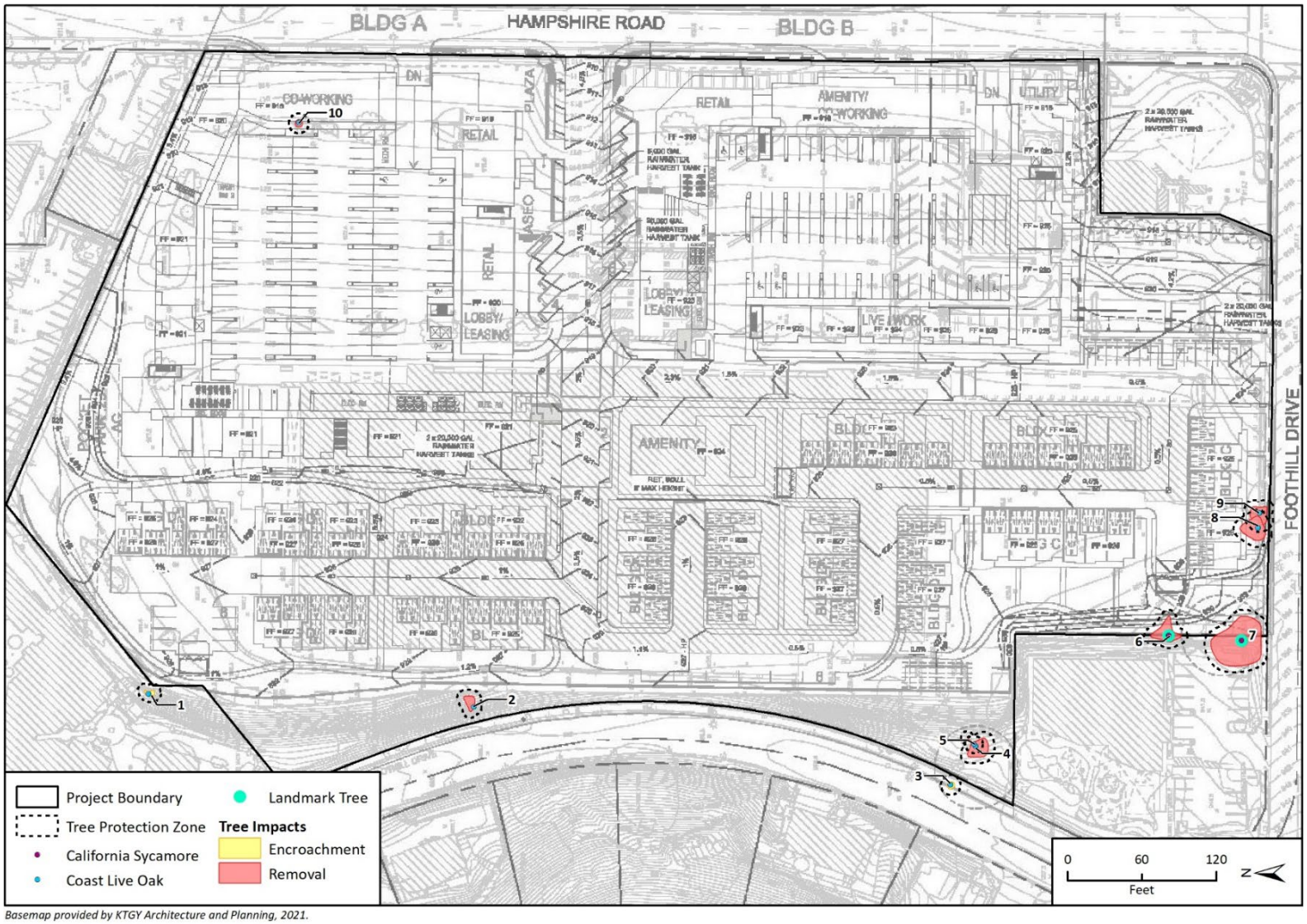
1.2 Project Description

The project site is located at 325 and 391 Hampshire Road, in the southeast portion of Thousand Oaks. The project site has been developed previously and is occupied by a vacant commercial development on the west side of Hampshire Road, approximately 540 feet south of US-101. Local access to the project site is provided from Hampshire Road and Foothill Drive. The project site is on the west side of Hampshire Road and the north side of Foothill Drive. According to the Ventura County Assessor's records, the project site is legally identified as Assessor's Parcel Numbers 676-0-150-365 and 676-0-150-375 (Figure 1).

The project site is mainly developed land with scattered ornamental and native vegetation landcover. The terrain consists of manicured sidewalks and medians, as well as steeply graded

slopes surrounding the site. The proposed project would demolish existing development and redevelop the site with a mixed-use, with residential and associated commercial neighborhood-serving uses. This would include residential, retail, and restaurant uses in two mixed-use buildings along the frontage of the site facing Hampshire Road and townhome apartments in the middle and rear of the site. The project will provide parks, naturally landscaped open space areas, walking paths, and a dog park throughout the site.

Figure 1 Tree Location Map



Basemap provided by KTGY Architecture and Planning, 2021.

2 Oak and Landmark Tree Survey Methodology

2.1 Tree Survey Methods

The tree survey was conducted by Rincon ISA Certified Arborist Genelle Watkins (#WE-12998A) on January 3, 2022. The survey was conducted in accordance with the City's Ordinances and Guidelines. All protected trees located on and immediately adjacent to the project site were surveyed. Tree locations were recorded using a Geode global positioning system (GPS) device. All surveyed trees were assigned a unique identification number with a corresponding physical tag affixed to the north side of the tree at 4.5 feet above natural grade, except where inaccessible due to physical barriers, such as fencing and a steep slope. Relationships among the trees (i.e., multiple trunks arising from the same root, mature clones of a no longer present parent tree) were not determined, as only above ground portions of the trees were examined. Crown (vertical) clearance and canopy spread in eight cardinal directions were measured. Data collected on the tree (i.e., trunk location and canopy spread) were used to map the trees are shown in Figure 1, Tree Location Map, and estimated impacts were based on a desktop calculation from GIS and what was observed during the survey. Appendix A summarizes the data for all protected trees that were surveyed. A photograph of each tree is provided in Appendix B.

The following data was collected on each protected tree:

Physical Characteristics

- Scientific and Common Name
- Diameter of all trunks – measured at 4.5 ft. above natural grade using a forester's diameter tape
- Crown clearance and spread – measured in eight cardinal directions at points equidistant around the circumference of the tree
- Height – estimated at an appropriate distance from the tree
- Structure – excessive horizontal branching, unbalanced crown, broken branches, etc.
- Appearance rating – A to E scale summarized in Table 1 below based on the Guidelines

Horticultural Evaluation

- Physical evidence of disease, exfoliation, leaf scorch, exudations, etc.
- Identification of pests, twig girdlers, borers, termites, pit scale, plant parasites, etc.
- Evaluation of tree's vigor – new tip growth, good leaf color, poor leaf color, abnormal bark, deadwood, thinning of crown; and recommended mitigation measures necessary to correct any problems.

Table 1 Overall Condition Rating Criteria

Rating	Health Condition
A – Outstanding	A healthy and vigorous tree characteristic of its species and free of any visible signs of disease or pest infestation.
B – Above Average	A healthy and vigorous tree. However, there are minor visible signs of disease and pest infestation
C – Average	Although healthy in overall appearance, there is a normal amount of disease and /or pest infestation
D – Below Average/Poor	This tree is characterized by exhibiting a greater degree of disease and /or pest infestation than normal and appears to be in a state of decline. This tree also exhibits extensive signs of dieback.
E – Dead	This tree exhibits no signs of life whatsoever.

2.2 Tree Mapping Methods

All protected trees surveyed were mapped in ArcGIS and overlain onto the current project site plan in a computer-aided design file. The trunk location is based on the GPS waypoint location that was recorded by the arborist from one side of the tree's trunk. Driplines were based on estimated crown spread collected at eight cardinal directions, as described above. The TPZ is shown based on the criteria described in the Guidelines (dripline plus five feet, or 15 feet from the trunk, whichever is greater). The protected trees are shown in Figure 1, Tree Location Map.

3 Oak and Landmark Tree Survey Summary

Ten protected trees were surveyed as shown in Figure 1. Of the 10 protected trees, eight are coast live oaks and two are California sycamores. One tree has a health rating of B (Above Average), Four trees have a health rating of C (Average/Fair) and five trees have a rating of D (Below Average/Poor) as summarized in Table 2 below. No protected trees surveyed had a health rating of E (Dead). No designated historic trees were present on the project site, according to the City's General Plan Conservation Element (City of Thousand Oaks 2013); however, two landmark sycamores were present on and immediately adjacent to the project site.

Table 2 Appearance Rating Summary

Tree No.	Species	A (Outstanding)	B (Above Average)	C (Average)	D (Poor)	E (Dead/Dying)
		0	1	4	5	0
1	coast live oak			1		
2	coast live oak				1	
3	coast live oak			1		
4	coast live oak			1		
5	coast live oak				1	
6*	California sycamore				1	
7*	California sycamore				1	
8	coast live oak			1		
9	coast live oak		1			
10	coast live oak				1	

***** Landmark Tree: designates a sycamore tree of 12-inch diameter at breast height (dbh) or greater; walnut or toyon 8-inch dbh or greater

Tree #2, #3, #4, #5 are growing on a steep slope, located on the western boundary of the property. Tree #1 is growing outside of the metal fence that currently borders the project. Trees #4 and #5 are in the playground of a day care center located near the southwest corner of the property. At the southern portion of the property, Tree #8, #9 are located within landscaping immediately adjacent to the property, alongside with several ornamental trees, shrubs and groundcover. Tree #10 is growing in a landscape cutout within the parking lot at the northwest corner of the property. Tree #6 and #7 are landmark trees located at the southwest corner of the property, growing immediately adjacent to a metal fence bordering the day care center and are surrounded by ornamental landscaping.

4 Tree Impacts

4.1 Summary of Tree Impacts

Of the ten protected trees, eight trees are proposed to for removal (Tree #6 and #7, are landmark sycamore trees greater than twelve inches in diameter),and two trees are expected to have up to 5 percent of their TPZs impacted by the project, Table 3 below indicates the proposed impact to each tree and the reason for the impact. Impacts are categorized as "minor" or "major" based on the amount of the tree's TPZ that would be impacted. If the TPZ would be impacted (i.e., encroached) by less than 30 percent, this is considered a "minor" impact; TPZ impacts greater than 30 percent are considered "major" because the tree's long-term survival is unknown.

Table 3 Impact Type

Tree ID Number	Species	Aggregate Trunk Diameter (inches)	Impact Status	Description of Impact
1	Coast live oak (*Quercus agrifolia*)	3.5	Minor Encroachment	Less than 5% of the TPZ is within the project and impacts will come from adjacent construction, equipment, and grading
2	Coast live oak (*Quercus agrifolia*)	4.5	Removal	Tree will be removed due to grading
3	Coast live oak (*Quercus agrifolia*)	3.5	Minor Encroachment	Less than 5% of the TPZ is within the project and impacts will come from adjacent construction, equipment, and grading
4	Coast live oak (*Quercus agrifolia*)	9	Removal	Tree will be removed due to grading
5	Coast live oak (*Quercus agrifolia*)	4	Removal	Tree will be removed due to grading
*6	California sycamore (*Platanus racemosa*)	12.5	Major (Removal)	Approximately 63% of the TPZ will be encroached by grading, directly next to trunk where feeder roots are located. The tree's long-term survival would be unknown; therefore, this tree shall be mitigated as a removal.
*7	California sycamore (*Platanus racemosa*)	45	Major (Removal)	Approximately 30% of TPZ will be encroached by grading, directly next to major roots and tree trunk. The tree's long-term survival would be unknown; therefore, this tree shall be mitigated as a removal.
8	Coast live oak (*Quercus agrifolia*)	24	Removal	Tree will be removed due to location of Building C
9	Coast live oak (*Quercus agrifolia*)	17	Removal	Tree will be removed due to location of Building C; if feasible, preservation is recommended because it is in good health
10	Coast live oak (*Quercus agrifolia*)	2.5	Removal	Tree will be removed for parking lot improvements

* Landmark Tree: designates a sycamore tree of 12 inch dbh or greater; walnut or toyon 8-inch dbh or greater

4.2 Discussion

Estimated impact percentages are based on the location of the TPZ and the project design. Currently, proposed project activities are assumed to require ground disturbance (i.e., grading and demolition) of all areas of the project boundary, and impacts to existing trees are based on that assumption. Anticipated tree impacts from grading encroachments in the TPZ would affect the tree's critical root zones, canopy, and may result in the limited ability for the tree to maintain its overall health and condition if the encroachment is 30 percent or more. Impact (encroachment) percentages were calculated in ArcGIS based on how much the tree fell within the project boundary and grading and construction areas. Trees #1 and #3 would endure only "minor" impacts and would be preserved.

Root systems vary by depth and the lateral extent based on tree species, age, slope, and soil type. Typically, tree roots are restricted in paved areas and under roadways due to the compacted nature of the soil that limits the availability of water and oxygen. In addition, trees that are leaning typically have roots that extend further in the direction away from the lean and trees that are on slopes typically have roots that extend further on the uphill side to anchor the tree. The full root zone may extend two to three times beyond the TPZ or may be smaller if the roots are impeded by physical barriers; however, to assess potential impacts from proposed developments, the TPZ is generally referenced as the tree's critical root zone. Most of the protected trees in the survey area are growing in existing landscaping or on manufactured slopes and are expected to have roots extending the full TPZ or beyond as appropriate for the species/maturity. Since the exact extent of root systems are unknown, actual impacts will not be known until the time of construction and will depend upon the tree structure and the construction activities (e.g., trench depth and width, need for trimming of crown for equipment clearance, etc.). Therefore, as previously indicated, the TPZ is referenced to determine the level of impact that is categorized as "minor" or "major".

Activities that may occur in association this project that could typically affect tree health and mortality when conducted nearby include but are not limited to the following:

- Excavation/trenching—root severance
- Soil compaction (during and post-construction)
- Grading (cut and/or fill)
- Change of grade
- Substantial trimming of crown or roots
- Damage to limbs and branches from project equipment collision (mechanical damage)

Due to the nature of grading and trenching, the greatest concern to tree health and mortality associated with the project is root damage. The ISA acknowledges that removing 20-25 percent of the roots of a tree could result in mortality. In general, it is not recommended to remove more than 30 percent of a tree's live tissue, either above or below ground, at any given time (Arborilogical 2009). Removal of larger roots (particularly lateral or sinker roots and roots greater than two inches in diameter) can severely impact the stability of the tree. However, healthy, young trees may tolerate impacts to as much as 50 percent of their crown or root system (Sinclair et al. 1987). Trees that are relatively large and/or old for the species or already under stress will have lower tolerances.

Adherence to the tree protection measures outlined in Section 5 of this report would minimize impacts to protected trees that would be preserved. Actual impacts may vary during construction, and trees that are considered removals may not need to be removed if project components can be

shifted or redesigned to avoid/minimize impacts. For example, tree #10 may be able to be preserved if a landscape cutout is designed around the tree. Trees that exceed 30 percent encroachments of the TPZ may not survive and are considered removals for the purposes of replacement requirements (i.e., mitigation).

5 Oak and Landmark Tree Protection Plan

The following measures should be implemented to reduce impacts to protected trees, pursuant to the City's Ordinances and Guidelines. Protected trees referenced in this Tree Protection Plan include both oak and landmark trees.

5.1 Pre-Construction

Oak Tree Preservation Consultants

The developer/property owner shall identify a certified arborist (Tree Preservation Consultant) of record for the project and shall notify the Tree Preservation Consultant and Community Development Department 48-hours in advance before authorized work commences within a Tree Protection Zone (TPZ). The developer/landowner shall notify the Community Development Department in writing within five days of terminations and changes in their Tree Preservation Consultant(s) of record.

Fencing/Signage

A minimum five-foot-high new chain link fence or approved material (e.g., orange snow fence) shall be installed at the outermost edge of the TPZ of each protected tree or group of trees that are immediately adjacent to construction. Exceptions may occur in cases where protected trees are located on slopes that would be avoided; however, approval must be obtained from the Community Development Department to omit fences around protected trees prior to the initiation of construction activities. The fencing shall be installed and then inspected by the Community Development Department prior to the start of grading operations. Additionally, signage shall be installed at four locations equidistant around each tree; around a grove of trees, signs shall be placed at approximately 50-foot intervals. The size of each sign must be two feet by two feet in size. The signs shall indicate *"WARNING. This fence shall not be removed or relocated without the written authorization from the Community Development Director"* and should remain in place throughout the period of construction. The Community Development Department shall verify the installation of fencing/signage prior to the initiation of construction activities.

5.2 During Construction

Oversight of Impacts to Trees

No construction activities may occur within the TPZ without oversight by a certified arborist. A certified arborist should conduct a site walk with the project engineer or construction manager prior to ground disturbance to determine anticipated impacts and measures to minimize impacts to protected trees. Following the site walk, the arborist should determine whether they should be present during construction activities near protected trees. The arborist shall be present at a minimum when any work is conducted within the TPZ, when trees may become hazardous (see *Root Severance* measure below), or when pruning (see *Pruning/Trimming* measure below) is required. When a construction activity occurs within the TPZ, a daily log will be completed by the arborist that documents all root and branch cuts (size, number, and location) for each tree. In addition, a copy of

this report, the protected tree location map, and the approved City of Thousand Oaks Tree Permit shall always be on site.

Setback Requirements

A minimum 15-foot setback from the trunk of an oak tree shall be maintained at all times. No encroachments, unless otherwise permitted or exempt in accordance with Title 5, Chapter 14 of the Municipal Code, shall be permitted to occur closer than 15 feet away from the trunk of a protected tree. Any deviation from a 15-foot setback shall be approved by the Community Development Department.

Grading/Excavation/Trenching

Where grading, trenching, or any other ground disturbing activity occurs and/or is specifically shown on the project plans within a protected tree's TPZ, the activity must be done slowly so that when roots are encountered, they are not ripped or damaged by equipment. Hand tools or small hand-held power equipment shall be utilized to the extent feasible. Any subsurface work that must be conducted by mechanical equipment shall be directly monitored by a certified arborist. Cutting roots one inch in diameter or greater should be avoided wherever possible.

Retaining Walls and Footings within the Protected Zone

Retaining walls that have been approved by the Oak/Landmark Tree Permit within TPZs shall be completed before completion of grading operations and commencement of the construction phase. Where structural footings are required and roots will be impacted, the footing(s) shall be bridged and the roots protected. Cover all such roots with a layer of plastic cloth and 2 to 4 inches of Styrofoam matting or other protective measure as approved by permit, prior to pouring the footing.

Utility Trenching-Pathway Plan

Prior to the completion of grading operations and before commencement of the construction phase, the developer shall submit a Utility Trenching-Pathway Plan to the Community Development and Public Works Departments for review and approval. The plan shall depict: Storm drains, sewers, easements, drain lines/dissipators, gas lines, electrical service, Cable TV, and water mains. Additionally, the plan must show all lateral lines serving the residences. The plan must include surveyed locations of all protected trees on the project. The plan must be developed to avoid going into the TPZs of any Protected tree on its path from the street to the building. Where it is not feasible to avoid encroachment, encroachments must be minimized and addressed in a supplemental Protected Tree Report.

Parking Lots and Pedestrian Walkway Improvements

Parking lots and pedestrian walkways shall be designed so that unhealthy protected trees with a "poor" or "dead" health rating are proposed for removal unless it is felt that major surgery coupled with a nutrient feeding program will restore the tree to a safe and vigorous condition.

To the extent possible, parking spaces should not be located directly under the canopy of protected trees. When this is not possible, pervious paving material will be employed to the satisfaction of the Directors of Public Works and Community Development Departments.

Cut and Fill Slopes

Every effort should be made to avoid cut and/or fill slopes within TPZs. Where fill slopes are proposed, the Protected Tree Report must include a Soils Report indicating whether will be necessary to cut and re-compact the area prior to moving the fill material into position.

Root Severance

When root cutting occurs, exposed major roots that are greater than one inch in diameter (per the Guidelines) should not be ripped by construction equipment and should be preserved to the extent feasible. If roots greater than one inch are required to be cut to allow for construction, under the direct supervision of the Tree Preservation Consultant, cuts should be clean and made at right angles to the roots with sterilized equipment (e.g., Sawzall, pruning shears or chainsaw). New cuts should be covered with absorbent tarp or heavy cloth fabric to prevent drying out until backfilling occurs. It may be determined by the Tree Preservation Consultant that supplemental irrigation is necessary to aid trees that incur root loss and/or during hot and dry periods. If structural roots are severed within an area three to five times the trunk diameter, the tree may become hazardous, and the arborist may recommend removal of the tree.

Pruning/Trimming

Any pruning that is needed to remove overhanging limbs of retained trees should be performed or supervised by a certified arborist (Tree Preservation Consultant). The project arborist should review the goals with workers prior to commencement of any tree pruning. Tree workers should be knowledgeable of ISA Best Management Practices for Tree Pruning (Lilly et al. 2019) and ANSI A300 Pruning Standard (Tree Care Industry Association 2017) and should adhere to the most recent edition of ANSI Z133.1. Pruning/trimming of protected trees will be limited to only what is necessary for construction. Climbing spurs and spikes may not be used, except in cases of emergency.

Soil Compaction

Soil compaction imposes a complex set of physical, chemical, and biological constraints on tree growth. Principal components leading to limited growth are the loss of aeration and pore space, poor gas exchange with the atmosphere, lack of available water, and mechanical impedance of root growth. Soil compaction is the largest single factor responsible for the decline of trees on construction sites. The following guidelines are recommended to protect trees from soil compaction that may occur due to project activities:

- No equipment or materials will be stored under canopies, or within the TPZ of protected trees. On-site staging, storage and washing of construction materials and equipment will be limited to designated and approved areas. In areas where vehicles or equipment may impact tree roots, steel plates or plywood should be installed to protect sensitive root zones as needed.

Exhaust Exposure

Equipment should limit or avoid travel within TPZs (under tree canopies) to reduce impacts from equipment exhaust exposure. If equipment must operate within TPZs, the exhaust should be directed away from the foliage of protected trees, as feasible. When equipment is operating within TPZs, a certified arborist should monitor and document the activity.

Mechanical Damage

Damage to limbs and branches from project equipment (mechanical damage) may occur if work, including staging and access, occurs within TPZs. If damage occurs to limbs and branches, immediate trimming with clean cuts should occur in accordance with the ANSI standards discussed above. If damage to the bark or trunk occurs, wound dressings are not recommended. Treatment of said damages may be applied in accordance with the ANSI A300 Management of Trees and Shrubs during Site Planning, Site Development, and Construction (ANSI 2012). A certified arborist or a monitoring biologist who is in close communication with the arborist should monitor and document this activity.

New Plants in Protected Zone

Although it is best not to allow any plants within the protected zone, only drought tolerant plants will be permitted around oak trees. If landscaping is proposed near oak trees, irrigation shall be limited to a drip system, no overhead irrigation is allowed.

Landscaping and associated drip irrigation should be placed at least 10 feet away from existing oak tree trunks to avoid promoting fungal diseases such as the oak root rot (*Armillaria mellea*).

Damage

If a protected tree is damaged during construction to the point where removal is required, or the tree may not survive as determined by a certified arborist and approved by the Community Development Department, replacement may be required as detailed in the Section 5.1.2 below. Damage is defined by the Oak Tree Ordinance as any action which causes injury, death, or disfigurement to a tree (including but not limited to cutting, overwatering, relocation, transplanting, trenching, excavating or paving within the protected zone). For the purposes of this report, damage is defined as impacts exceeding 30 percent that the tree may not survive, as determined by a certified arborist.

6 Oak and Landmark Tree Replacement Guidelines

The Guidelines provide detailed standards and requirements for protected oak removal replacement but does not provide specific standards and requirements for landmark tree removal replacement. As such, replacement standards for landmark tree removal may largely be dependent on the decisions of the Director of Planning and Community Development.

The Ordinances state that conditions on removal may be imposed on the oak and/or landmark tree permits at the discretion of the decision maker including but not limited to:

- A condition requiring replacement or placement of additional trees on the subject property to offset impacts associated with loss of a tree, limbs, or encroachment into the protected zone of an oak or landmark tree
- The relocating of a tree on-site or off-site, or planting of a new tree off-site to offset loss of a tree
- A condition requiring an objectively observable maintenance and care program be initiated to ensure continued health and care of oak or landmark trees on the property
- Payment of a fee or donation of a boxed tree to the City or other public agency to be used elsewhere in the community should a suitable replacement location of the tree not be possible on site or off site

Oak Tree Replacement

The Guidelines require the following tree replacement ratios for removed trees for residential, commercial, and industrial properties:

- Dead or Hazardous oaks shall be replaced with one fifteen-gallon oak tree.
- Healthy oaks not exceeding 48 inches in diameter shall be replaced with two 24-inch box trees and one 36- inch or 60-inch box tree.
- Healthy oaks exceeding 48- inches in diameter shall be replaced with two twenty-four (24”)-inch box trees and either the largest available nursery grown tree or two sixty (60”)-inch box trees.

In accordance with the Guidelines, replacement trees will be of the species coast live oak, valley oak, or other oak tree varieties as approved by the Community Development Department. In some cases where it is not possible to obtain nursery grown trees in the sizes required, an equivalent number of large and small container oak trees will be planted in an amount equal to the cost of the larger but unavailable trees.

In certain cases, the City may consider the relocation of oak trees from one area in the project to another as follows:

- The trees being recommended for relocation must be approved by Department of Community Development whose decision will be based upon factors (health, type, size, time of year, location)

- Size of relocated tree should not exceed six inches in (trunk) diameter. Exceptions may be made if larger diameter nursery grown oak tree is available and can be reserved for a period of one year
- Refundable cash security deposit in amount equal to cost of purchasing equivalent nursery grown oak will be made with Community Development Department prior to relocation. The deposit will be refunded after 12 months if the community development department determines the tree has survived and is in good health. If the tree is considered marginal, the deposit will be retained for another 12 months, when another inspection will be conducted. If the health of the tree is unchanged or had declined, the developer will remove the relocated tree and replace it within an equivalent nursery grown oak tree. The security deposit will then be refunded.
- Trees of replaceable size may be considered for removal so that new nursery tree can be planted on site in more appropriate location relative to new construction.

The project is located on commercial property; therefore, it is subject to the replacement ratios from the Oak Tree Preservation Guidelines. As such, to remain in compliance with the Guidelines, the applicant must replace removed oak trees at a 3:1 ratio with two 24-inch box trees and one 36-inch box tree as indicated below in Table 5. Eighteen (18) coast live oak trees and six (6) California sycamore trees will be planted for mitigation purposes. According to the proposed site plan, ample space exists to support planting of mitigation trees onsite. Therefore, trees must be planted with compatible drought-tolerant landscaping and similar irrigation requirements, while tree locations shall be reflected in the landscape plan prior to issuance of a grading permit. The trees that would require removal are native to California; all of which are growing in landscaped areas.

A summary of the tree replacements is below in Table 4.

Table 4 Tree Replacement Summary

Tree ID Number	Species	Appearance Rating	Aggregate Trunk Diameter (inches)	# of Replacement Trees	Replacement Tree Size
2	Coast live oak	D	4.5	3	24” box (2) & 36” box (1)
4	Coast live oak	C	9	3	24” box (2) & 36” box (1)
5	Coast live oak	D	4	3	24” box (2) & 36” box (1)
6	California sycamore	D	12.5	3	24” box (2 & 36” box (1))
7*	California sycamore	D	45	3	24” box (2) & 36” box (1)
8	Coast live oak	C	24	3	24” box (2) & 36” box (1)
9	Coast live oak	B	17	3	24” box (2) & 36” box (1)
10	Coast live oak	D	2.5	3	24” box (2) & 36” box (1)
Total				**24**	**24” box (16) & 36” box (8)**

***** A 30 percent encroachment into the protective zone is proposed. It is unknown if the tree would survive this amount of encroachment; therefore, an ISA certified arborist with a current ISA Tree Risk Assessment Qualification (TRAQ) should conduct a Level 2 Basic Tree Risk Assessment and/or Level 3 Advanced Tree Risk Assessment to inspect the tree immediately following the completion of grading to determine the tree’s likelihood of failure by assigning a risk rating of imminent, probable, possible, or improbable. If the risk rating for tree failure is determined to be “imminent” or “probable”, the tree shall be removed and replaced onsite or at an offsite location determined and approved by the Community Development Director prior to issuance of a grading permit. Due to the large size of this California sycamore tree (45-inch cumulative trunk diameter and 45-foot canopy spread), this tree shall be replaced with two 24-inch box and one 36-inch box California sycamore trees. If the arborist determines the risk rating for tree failure to be “possible” or “improbable” with an unlikely likelihood of impacting a target and low consequence of failure, the tree shall be retained and preserved in perpetuity and no replacement trees would be required.

Location of Mitigation Trees

The location of replacement trees shall consider, but not be limited to the following:

- The vegetative character of the surrounding area near the project site (i.e., compatible sunlight, soil and watering requirements)
- Existing landscaping and tree canopy. Trees should not be planted within the dripline of existing, and tree spacing should consider the size of the mitigation tree at maturity. At a minimum, mitigation trees should be spaced at least 20 feet apart (20 feet on center). trees.
- The probability of long-term success of the replacement oak and landmark trees. Trees should be in a healthy condition.
- Mitigation trees shall be planted onsite and reflected in the landscape plan. If the project site is unsuitable for planting one or more of the replacement trees, the Community Development Director may approve other options as follows:
    1. Planting replacement oak trees on public property such as designated open space areas, public parks, etc.
    2. Cash payment to the City's Open Space Conservation Fund in an amount equal to the value (stock and installation) of the required replacement trees that were removed, as determined by the current tree valuation formula of the International Society of Arborists
- Space the trees at least 20 feet apart (20 feet on center).

7 References

American National Standards Institute (ANSI). 2012. Tree, Shrub, and Other Woody Plant Management - Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)

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Appendix A

Protected Tree Survey Data

Tree ID	Common Name Scientific Name	# of Trunks	Individual Trunk Diameters	Aggregate Trunk Diameter	Height (ft)	Canopy Spread (ft)	Canopy Spread (N, NE, E, SE, S, SW, W, NW)	Overall Condition Rating	Landmark Tree? (Y/N)	Physical Condition	Notes	Impact	Impact Notes
1	Coast live oak *Quercus agrifolia*	2	1.5, 2	3.5	12	6	(2,5,2,5,5,2,1,1)	C	N	Young tree with codominant stems that are moderately leaning, leaf chlorosis in 5% of canopy	Tree on elevated slope on other side of fence, not tagged inaccessible	Minor Encroachment	Less than 5% of the TPZ is within the project and impacts will come from adjacent construction, equipment, and grading
2	Coast live oak *Quercus agrifolia*	2	2.5, 2	4.5	12	10	(5,12,8,1,1,1,1,5)	D	N	Young tree with codominant stems containing weak branch attachments, pruned previously, sparse canopy abnormal to species and seasonal changes, leaf chlorosis on remaining leaves in canopy	Tree on steep elevated slope, tagged	Major (Removal)	Tree will be removed due to grading
3	Coast live oak *Quercus agrifolia*	4	1, 1.5, 0.5, 0.5	3.5	6.5	6	(3,3,3,3,3,3,3,3)	C	N	Sapling, basal epicormic shooting, low branching with dark green foliage, fair vigor	Tree down slope of sidewalk, tagged	Minor Encroachment	Less than 5% of the TPZ is within the project and impacts will come from adjacent construction, equipment, and grading
4	Coast live oak *Quercus agrifolia*	1	9	9	25	28	(5,5,5,10,10,10,8,10)	C	N	Moderate lean northeast, galls present throughout canopy, leaf chlorosis in 10% of canopy with some branch dieback	Tree on other side of fence in day care yard, not tagged	Major (Removal)	Tree will be removed due to grading
5	Coast live oak *Quercus agrifolia*	1	4	4	20	8	(1,8,1,2,2,2,2,2)	D	N	Moderate lean northeast, unbalanced crown, dull leaf color, possibly due to overcrowding of neighboring oak, low vigor	Tree on other side of fence in day care yard, tagged	Major (Removal)	Tree will be removed due to grading
6	California sycamore *Platanus racemosa*	1	12.5	12.5	30	20	(15,10,16,5,10,5,5,5)	D	Y	Codominant stems, weak branch attachments, sparse canopy abnormal of seasonal leaf drop, leaning caused by kink midway up trunk	Tree on elevated slope on other side of fence, not tagged	Major (Removal)	Approximately 63% of TPZ will be encroached by grading. The tree's long-term survival would be unknown.
7	California sycamore *Platanus racemosa*	3	18, 18, 9	45	35	40	(25,15,20,20,15,20,20,25)	D	Y	Included bark between codominant stems causing weak trunk attachment, vines covering trunk base making way up through branching into canopy, may contribute to restricting tree's ability to uptake nutrients/water	Tree in fence line, within project boundary	Major (Removal)	Approximately 30% of TPZ will be encroached by grading. The tree's long-term survival would be unknown
8	Coast live oak *Quercus agrifolia*	3	6, 8, 10	24	22	20	(15,10,10,5,5,8,10,10)	C	N	5% leaf chlorosis throughout canopy, codominant stems, cracked trunk	Tree on sidewalk outside of fence, immediately adjacent to project boundary, canopy and tpz within project area, tagged	Major (Removal)	Tree will be removed due to location of Building C
9	Coast live oak *Quercus agrifolia*	2	6, 11	17	24	20	(8,8,5,8,5,8,10,8)	B	N	Codominant stems, slight lean, 5% leaf chlorosis throughout canopy, overall good vigor	tree on sidewalk outside of fence, immediately adjacent to project boundary, canopy and tpz within project area, tagged	Major (Removal)	Tree will be removed due to location of Building C; if feasible, preservation is recommended because it is in good health
10	Coast live oak *Quercus agrifolia*	1	2.5	2.5	12	6	(3,3,3,3,3,3,3,3)	D	N	15% leaf chlorosis throughout canopy, moderate lean, low vigor, epicormic shooting starting from the basal area of the trunk to the branch and canopy	Tree in planter median within project area	Major (Removal)	Tree will be removed for parking lot improvements

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Appendix B

Tree Photographs

Photograph 1. Tree #1 Coast live oak (*Quercus agrifolia*)

Photograph 2. Tree #2 Coast live oak (*Quercus agrifolia*)

Photograph 3. Tree #3 Coast live oak (*Quercus agrifolia*)

Photograph 4. Tree #4 Coast live oak (*Quercus agrifolia*)

Photograph 5. Tree #5 Coast live oak (*Quercus agrifolia*)

Photograph 6. Tree #6 California sycamore (*Platanus racemosa*)

Photograph 7. Tree #7 California sycamore (*Platanus racemosa*)

Photograph 8. Tree #8 Coast live oak (*Quercus agrifolia*)

Photograph 9. Tree #9 Coast live oak (*Quercus agrifolia*)

Photograph 10. Tree #10 Coast live oak (*Quercus agrifolia*)

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